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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,468	11/29/2001	Varalakshmi Basawapatna	A34033-073214.0110	6148

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EXAMINER
TAKAOKA, DEAN O

ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/997,468	Applicant(s) BASAWAPATNA ET AL.	
	Examiner Dean O Takaoka	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-14* is/are allowed.

6)☒ Claim(s) *1,2,8 and 15-18* is/are rejected.

7)☒ Claim(s) *3-7,9-11 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Parrott et al. (U.S. Patent No. 5,959,513).

Claim 1:

Parrott et al. (best illustrated in Fig. 3) shows a ferrite crystal resonator coupling structure comprising: a circuit substrate (11) having a first and second side and an aperture extending through the substrate (best illustrated in Fig. 4 where the aperture is not labeled but is bridged by coupler 15), where the aperture is configured to permit rotation of a ferrite crystal (col. 1, lines 53-65) disposable at least partially therein; and a coupling member (15) extending between a first end and a second end of the first opening of the aperture across at least a portion of the first opening of the aperture, such that an electrical current is directable through the coupling member.

Claim 2:

Where the ferrite crystal is rotateable about a plurality of axes where a desirable axis of the ferrite crystal is alignable in relation to a magnetic field within the aperture (col. 1, lines 44-65; where the applied field is the magnetic field, where the tuning

rotation of the temperature coefficient axes TC is disclosed as normal to the applied field).

Claim 8:

A structure for applying force to effect rotation of the ferrite crystal about an axis of rotation of the ferrite crystal (where the structure is defined by the Examiner as comprising elements 19 and 21 and rotation in col. 5, lines 33-38 and col. 1, lines 44-65, discussed previously in the reasons for rejection of claim 2).

Claims 15 – 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Keane (U.S. Patent No. 4,127,819).

Claim 15:

Keane shows a computer controlled automatic alignment system operable to effect rotation of a ferrite crystal resonator coupling structure (the ferrite crystal resonator shown as YIG sphere 12 – Fig. 1 and 154 – Fig. 13) in a controlled incremental fashion (col. 3, lines 13-55; where the input signal or signals are linearly swept by the resonator circuit and compared with a sweep waveform, the sweep rate providing sampling per period where the swept signal is superimposed on the center frequency tuning current; further where a continual sweep and cyclic current is disclosed in col. 5, lines 12-28, thus providing tuning in incremental fashion) until a desirable axis of the ferrite crystal is aligned in relation to a magnetic field (col. 7, lines 20-26), the automatic alignment system comprising: a control computer (bandwidth control 19 – Fig. 2); a motor controller (air coil drive 148 – Fig. 13) coupled to the control

computer; a motor (comprising air core coils 155 and magnets 149 – Fig. 13) coupled to the control computer, the motor operable to generate a force for rotating the crystal (where tuning of the YIG sphere comprises the disclosed orientation of the YIG sphere to the zero temperature axis – col. 7, lines 20-26, thus inherently rotated); a main coil sweep unit (col. 5, line 60 to col. 6, line16) coupled to the control computer, the main coil sweep unit operable to supply a variable electrical current (col. 10, lines 28-53; where the D/A converter 44 provides an output voltage linearly proportional to the number of clock pulses which is fed into the air coil driver or motor of the ferrite resonator) to the ferrite crystal resonator coupling structure; and output instrumentation coupled to the control computer, the output instrumentation (e.g. comprising elements 28, 29, 30, 32 – Fig. 2) adapted to measure characteristics of the output of the ferrite crystal resonator structure and to provide the measurements to the control computer (i.e. feedback network 178 and summing amplifier 176 – Fig. 5).

Claim 16:

A scalar network analyzer (comprising elements detector 28 shown Fig. 2 being the analyzer in the circuit network and logarithmic amplifier 34 shown in Fig. 8a being scalar, thus both components comprising a scalar network analyzer; further where the circuit shown in Fig. 8a is a mere alternative to elements connected to RF detector 28 shown in Fig. 2, which are fed back into the YIG sphere) coupled to the control computer (48 – Fig. 8a or 19 – Fig. 2), the scalar network analyzer adapted to interface with the ferrite crystal resonator coupling structure and communicate any information collected by the scalar network analyzer to the control computer.

Claim 17:

A frequency counter (40 – Fig. 8a; col. 10, lines 39-41) coupled to the control computer (19 – Fig. 2), the frequency counter adapted to interface with the ferrite crystal resonator coupling structure (e.g. to YIG filter 18, 20) and communicate any information collected by the frequency counter to the control computer (e.g. analog readout 54).

Claim 18:

A spectrum analyzer (e.g. discriminator circuit shown in Fig 2, sans bandwidth control 19 or 134 shown in Fig. 12; where a band or spectrum of frequencies are linearly swept by the resonator circuit, the detector output compared with the sweep waveform as a function of the input signal – col. 3, lines 13-29, thus inherently being a spectrum analyzer) coupled to the control computer (19 – Fig. 2), the spectrum analyzer adapted to interface with the ferrite crystal coupling structure and communicate any information collected by the spectrum analyzer to the control computer.

Claim 19:

A power meter (122 shown in Fig. 12; where the control provides a means to turns off or reduce the input drive to the harmonic generator – col. 16, lines 4-8, thus inherently providing a metering function) coupled to the control computer, the power meter adapted to interface with the ferrite crystal coupling structure and communicate any information collected by the power meter to the control computer.

Allowable Subject Matter

Claims 12 – 14 are allowed.

Parrott et al. does not show a second circuit substrate.

Claims 3 – 7, 9 – 11, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Parrott et al. does not show a coupling substrate on the first side of the circuit substrate (claim 3); where the aperture restricts movement of the ferrite crystal (claim 7); where the rotateable element applies a frictional rolling force to the surface of the ferrite crystal (claim 9).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nicholson et al. – shows a ferrite sphere filter.

Seibel et al. – shows a network analyzer comprising a YTO.

Iwasaki – shows a YIG filter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (703) 305-6242. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817

dot
June 13, 2003